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DEPARTMENT OF VISITING NURSING AND SOCIAL WELFARE*



IN CHARGE OF

EDNA L. FOLEY, R.N.

FORMALDEHYDE DISINFECTION IN TUBERCULOSIS

By JANE FLANAGAN

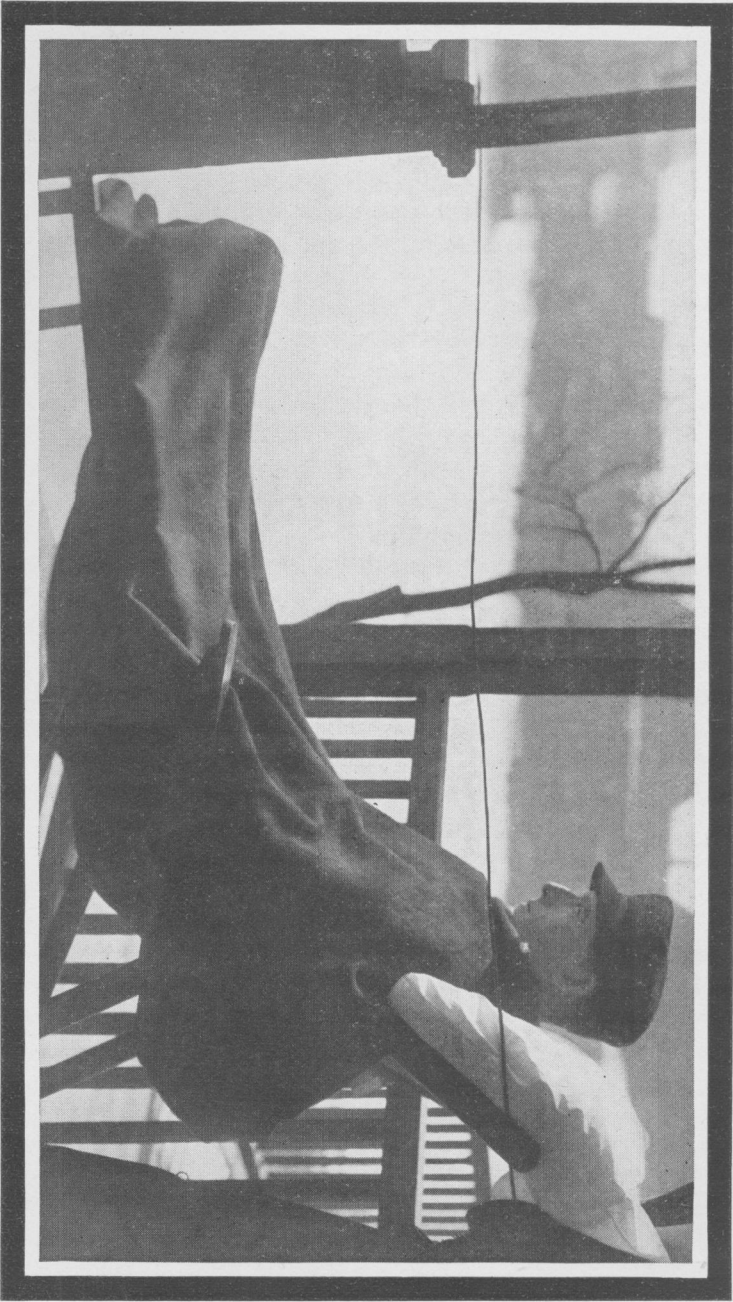
Tuberculosis Nurse, International Harvester Co., Chicago

WM. ROYAL STOKES, M.D., and H. W. Stoner, M.D., have recently conducted a series of laboratory and routine experiments to determine the utility of formaldehyde gas for surface disinfection in preventing the spread of tuberculosis. The report of these experiments shows that the tubercle bacillus was destroyed in dried sputum by the use of formaldehyde gas in any one of the three following forms and manners:

Formalin-Permanganate Method.—Consists of the use of fluid formalin and permanganate of potash in the proportion of two parts of formalin to one part of permanganate of potash. Arrangements should first be made to caulk all cracks and small openings with cotton. A galvanized iron pail should then be set in the centre of the room and the permanganate sprinkled evenly over the bottom of it, after which the fluid formalin should be poured over the permanganate and the room closed, in which condition it should be left for six hours, when it can be opened and the room aired. To insure destruction of the tubercle bacillus 1000 cubic centimetres of formalin and 500 grams of permanganate of potash (*twice* the amount required for disinfection after other contagious diseases) should be used for every 1500 cubic feet of air space to be disinfected.

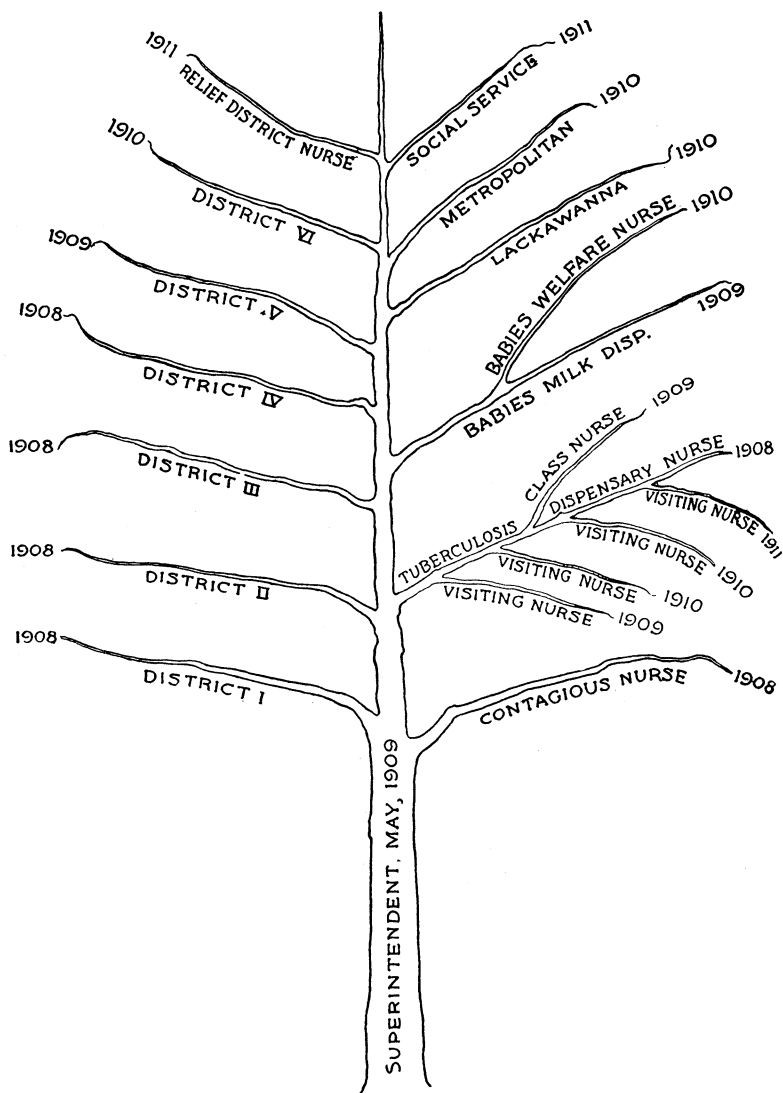
Paraform Paste Method.—Consists of generating the formaldehyde gas by placing solid paraform paste and water in a metal retort over an alcohol lamp and evaporating it in the room to be disinfected, after arrangements have been made to tightly caulk and close all small openings and cracks in the room. Five hundred cubic centimetres, or a good full pint, of water and six ounces of paraform paste should be used for every 1500 cubic feet of air space to be disinfected to insure thorough

* Material for this department should be sent directly to its editor, 105 West Monroe Street, Chicago.



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TREE SHOWING GROWTH OF DISTRICT NURSING IN BUFFALO

work, although $1\frac{1}{2}$ ounces of paraform paste to every 1000 feet of air space are generally sufficient to kill the tubercle bacillus in dried sputum.

Paraform Candle Method.—Consists of the burning of paraform candles in the room to be disinfected, which should be prepared in the same manner, as to closing of cracks and openings, as mentioned in the other methods. To insure against fire, each candle burned should be placed on a brick, or other non-inflammable object, which should in turn be placed in the centre of a shallow pan of water near the centre of the room. The candles may then be lighted and allowed to burn out without opening the room, for fear of fire. Three paraform candles, weighing thirty-five grams each, should be used for every 1500 feet of air space to be disinfected.

It was the conclusion of the doctors who conducted these experiments that any one of these three methods was about equally efficacious, but that the simplest and a little the most efficient was the Permanganate-Formalin method. It is preferable to the candle method because of its being free from any risk of fire, and to the paraform paste method because it does not require the alcohol lamp apparatus, for which the fumigator would have to wait in routine work. Experiments with these methods in which the pure test cultures of the tubercle bacillus were used showed that while an average of 90 per cent. of the cultures were killed with each method, the Formalin-Permanganate method was slightly more efficacious than either of the other two.

N. B.—The above abstract was taken from the 1910 report and published through the courtesy of the Maryland Association for the Prevention and Relief of Tuberculosis.

ITEMS

THE second annual report of the Toledo District Nurses is a splendid tribute to the good work of eighteen nurses serving among the sick poor of the city. Four are tuberculosis nurses employed by the Thalian Club; five are school nurses employed by the Board of Education; and the nine remaining nurses are on the staff of the District Nurse Association.

One new district has been opened, making six in all, each with its own sub-station and supply closet, while daily clinics are held at the association headquarters. There is an emergency ward at the headquarters where patients may be kept over night if necessary, and a large yard, where the association hopes to have its summer baby camp another year. Last year, a most successful day camp for babies was conducted on the grounds of the Flower Hospital.

The report of the superintendent of nurses, Josephine F. Riese, is full of interest to every nurse fortunate enough to obtain a copy, and the following extract shows how the Toledo Association members work together: "Our new district, No. 6, has every assurance of just such a working centre as has East Toledo. With a sub-station and the nurse's supplies located in the North Toledo Settlement House, with the school nurse in the North Toledo schools, the tuberculosis nurse, the school teachers, the workers of the settlement and the other charitable workers of Toledo to help fight the problems that arise there, North Toledo in another year will be an ideal district in which to live."

DETROIT visiting nurses during the past year (1910) have covered a wider range than ever before, and the social conscience of the whole city shows signs of a general awakening.

The watchful care of the nurses has been found to be especially needed in maternity cases where the requirements of the family have often made the mothers perform their daily task after only the second or third day. Little girls of eight or nine often have the care of mother, baby, and the entire family of five or six, one little girl of five being seen on a chair washing the baby's clothes in the kitchen sink.

Interest in the family is not limited to the immediate care of the patient. A nurse, called in to see two children ill with pneumonia, discovered in the same family another little girl with a deformity in both legs who was sent to the Children's Free Hospital. In another instance, a sick mother and a number of small children were found to have been deserted by the husband and father. The woman expressed her desire for a machine to do plain sewing and, her need being met by the District Nursing Society, she was soon comfortably supporting herself and family.

Relief supplied by the auxiliaries of the society included clothing, food, coal, and delicacies of all kinds for the sick. A wealth of Christmas cheer was lavished upon many beneficiaries, while over \$500 was contributed for balconies, tents, awnings, blankets, steamer rugs and warm clothing for patients in their own homes and those in the State Sanatorium.

Best of all are the many encouraging results from the efforts made to improve the living conditions of the people among whom the work has been carried on. Mrs. Lystra E. Gretter is superintendent of nurses.

THE most marked advance made during the year 1910 in the work of The Boston Instructive District Nursing Association was the successful carrying out of an experiment in connection with contagious

diseases. Two nurses were detailed to work on cases of scarlet fever and diphtheria for the Board of Health, the Boston Dispensary and the Lying-in Hospital. The work of these nurses showed that very much could be done for the protection of a whole neighborhood from the results of ignorance and carelessness; and so much in the way of instruction and supervision was accomplished by these nurses in two months that the city made an appropriation for the employing of four, and occasionally five, nurses to carry on this work.

The maternity work grew greatly in breadth and efficiency, the tendency being to reduce the number of mid-wives employed throughout the city, and to lessen infant mortality and chances for blindness by skilled nursing and instruction as to the proper care of children.

Most of the thirty nurses graduated from the training school last year have gone into some field of district nursing. Professionally much kindness has been met with, many physicians and social workers giving their time to lecture to nurses of the staff and of the training school. Happiness was brought at Christmas time to many children by large red stockings filled by more prosperous boys and girls and distributed by the nurses.

Special care has been given to debilitated patients for whom the nurse secures relief through the agencies for supplying special nourishment and by having some one teach a member of the family how to cook it. The nurse also plans and enforces sanitary regulations and educates the people in regard to the menace of concealed garbage and the necessity of protecting milk from germs. Two of the most important innovations have been the appointing of a cooking attendant for more helpless or ignorant families, and the employment of more charwomen.

DURING the past year the Kansas City, Mo., visiting nurses have opened an office in the new Charity Building, which speaks well for the local spirit of co-operation. True growth is more frequently indicated by an ability to share work with other organizations than by one society's attempt to bear all of the burdens of its people alone, and visiting nurses who work closely with relief and other agencies realize that their work grows in intensity and effectiveness as it decreases in scope.

The association has applied for a city charter and has also received the endorsement of the Board of Public Welfare, a body appointed to establish the reputable charities of the city on a firmer basis.

The superintendent of the association, Mena Shipley, R.N., has given nine addresses on the work of the organization, and a series of ten health talks to the Italian mothers of the Forest Mission Home. Miss Shipley

has now a staff of five nurses, one devoting all her time to cases of tuberculosis, another giving her time entirely to Metropolitan Insurance cases.

IN a recent appeal for more hospital facilities for the advanced consumptive, published by the Committee on the Prevention of Tuberculosis of the Charity Organization Society of the City of New York, it is stated that fully seven thousand beds are now needed, whereas there are beds for only three thousand two hundred and thirty-five. The following paragraphs taken verbatim from the report will be of interest to tuberculosis nurses who are elsewhere struggling with this same big problem.

"We must take into consideration the fact that the demand for hospital treatment has been greatly increased by the splendid work carried on by the Health Department through its staff of visiting nurses. The same result has also followed the work of the nurses in the thirty clinics throughout the city. There are now not less than 200 nurses visiting the homes of the thousands of tuberculosis cases in the city, urging the advanced cases to go to hospitals and the early cases to go to sanatoria. The urgent need for additional hospital beds has been emphasized by all of these nurses with whom we have talked.

"It is now the almost unanimous opinion of medical experts familiar with this problem that the segregation of advanced cases of tuberculosis is necessary to any adequate control of this disease. If the proper hospital facilities were available for all of the cases who are now anxious for hospital treatment, or could be induced to accept hospital treatment, the splendid work of the visiting nurses, both of the Health Department and of the clinics, could be made even more effective by the concentration of their energies upon cases of more hopeful nature which would respond to home treatment."

THE chief superintendent, Mary Ard MacKenzie, of the Victorian Order of Nurses for Canada, reports that the year 1910 was a most satisfactory one. The work has been extended; forty-nine new nurses have been admitted into the Order, and there are now actively working one hundred and sixty nurses (not including the emergency and relief nurses) in forty-four cities and towns of the Old Dominion.

Many of the branches now have nurses' homes, which means far greater comfort for the workers. The Vancouver branch has greatly extended its activities and is planning to build a much larger home for nurses. The Revelstoke Hospital Society has opened an emergency hospital of eight beds. The Lady Minto Hospital at Melfort, Saskatchewan,

now can accommodate twenty-seven patients. The Queen Victoria Memorial Hospital, North Bay, has been practically made over, with a handsome new wing added. The year has been a record one for the Ottawa branch, the number of nurses increasing from six to twelve. The Toronto branch has increased its staff to eleven. The Hamilton branch has brought about a marked decrease in infant mortality by supplying clean milk for the babies. The Montreal branch has now forty nurses in its eleven districts and was called upon to do strenuous work in the serious typhoid fever epidemic during the year. At first, many of the nurses were on duty in the Typhoid Emergency Hospital, but as the epidemic spread the nurses were put back in the districts, where between the months of December, 1909, and February, 1910, the nurses cared for five hundred cases of typhoid. Their faithful service was recognized by the City Fathers who have made a further appropriation of \$500 to the work. In addition, the Montreal branch supplies a nurse to work in the schools under the city and two under the Protestant School Board. There is also here a marked increase in the work among tuberculous patients; three Victorian nurses are living in the Royal Edward Institute and give all their time to tuberculosis work. During the year an anti-tuberculosis association was formed at St. John, N. B., and at their own expense sent one of the Victorian nurses to take post-graduate work at Bellevue, in order that she might act as tuberculosis visiting nurse for them. In Sydney, N. S., an anti-tuberculosis association was organized and at their request the Victorian Order took care of the patients. A Victorian Order nurse was appointed missionary district nurse on the Grand River Indian Reserve, near Brantford, Ontario. She does the necessary nursing in the whole reserve, twelve miles square, and also teaches hygiene and sanitation to these wards of the state. The Victorian Order has just followed the example of the American District Nursing Associations in giving nursing care to sick policy holders of the Metropolitan Insurance Company.

This brief résumé gives but a scant idea of the tremendous territory covered by the nurses of this Order, for their stations extend from Labrador to the Maine border and from ocean to ocean. Urban and rural, general and special, visiting nurses all find a place in this splendid scheme, and the report will be full of interest to all nurses having the reorganization of district nursing at heart.